ASSIGNED TO ASSIGNEE

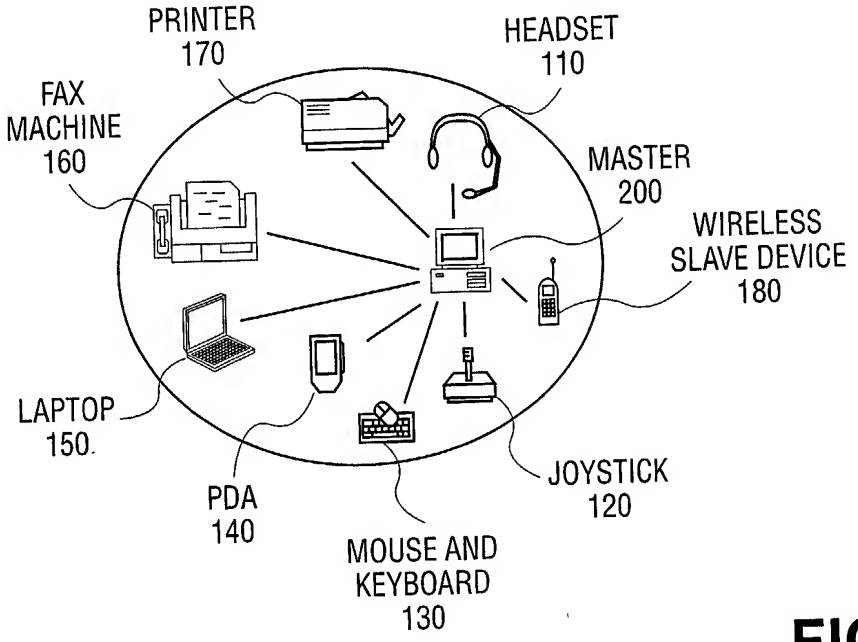



FIG. 1

BLUETOOTH PICONET 100

20560E0" T0m26001

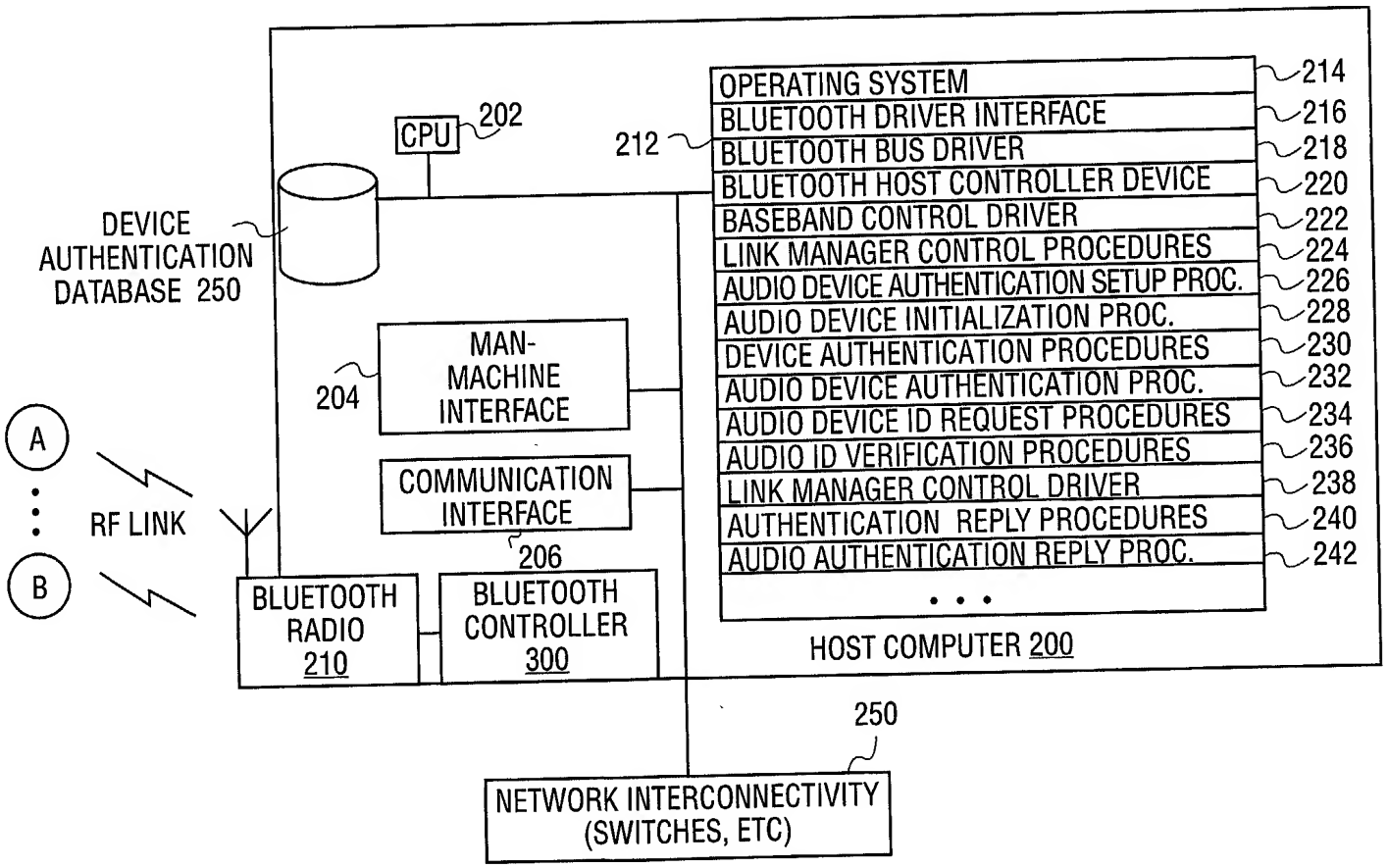



FIG. 2A

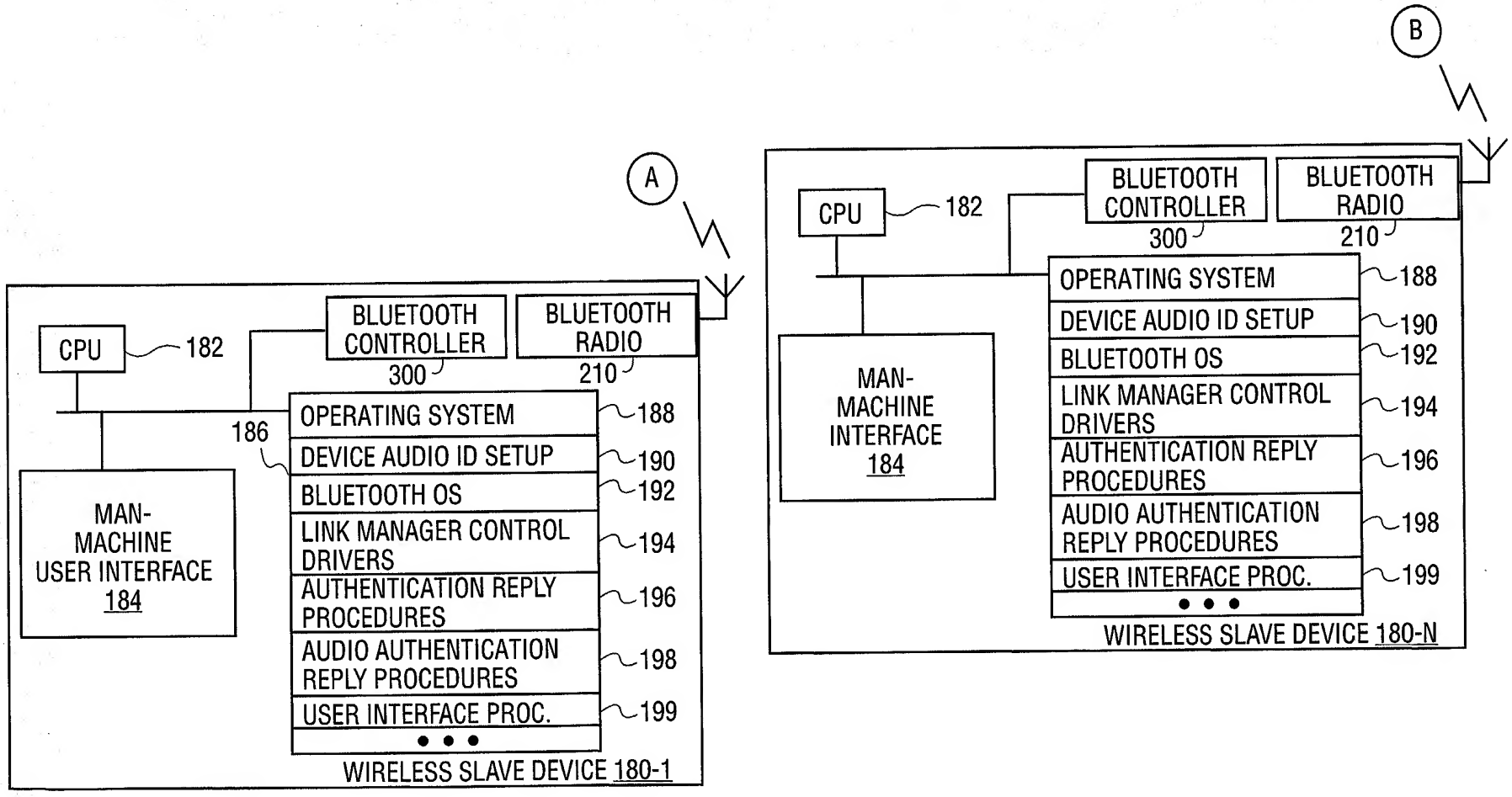

A
B
CPU
182
BLUETOOTH CONTROLLER
300
BLUETOOTH RADIO
210
186
OPERATING SYSTEM
188
DEVICE AUDIO ID SETUP
190
BLUETOOTH OS
192
LINK MANAGER CONTROL DRIVERS
194
AUTHENTICATION REPLY PROCEDURES
196
AUDIO AUTHENTICATION REPLY PROCEDURES
198
USER INTERFACE PROC.
199
MAN-MACHINE USER INTERFACE
184
WIRELESS SLAVE DEVICE 180-1
WIRELESS SLAVE DEVICE 180-N

FIG. 2B

20sned TO:26001

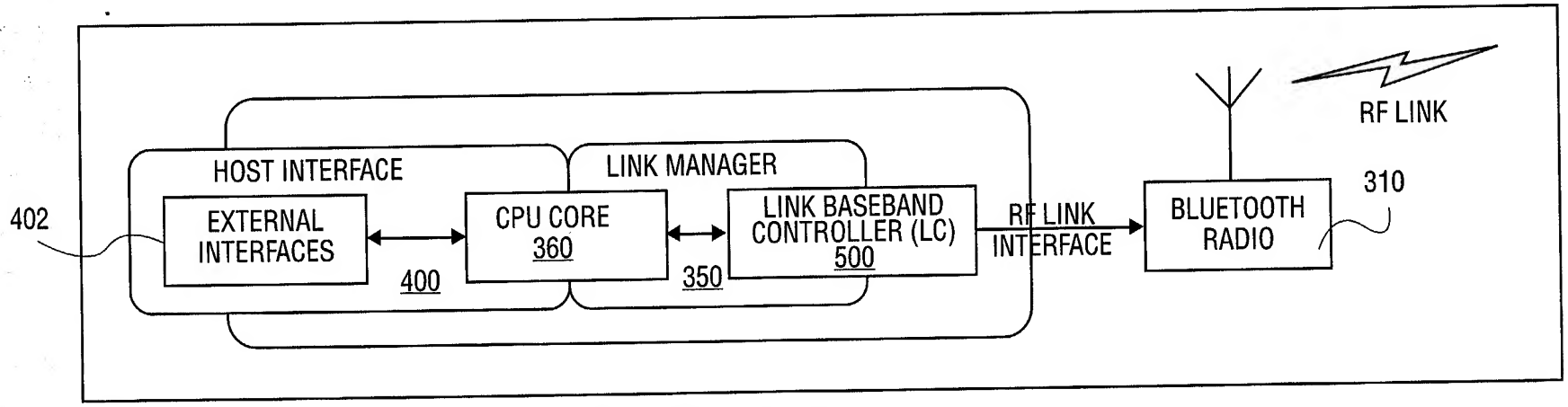
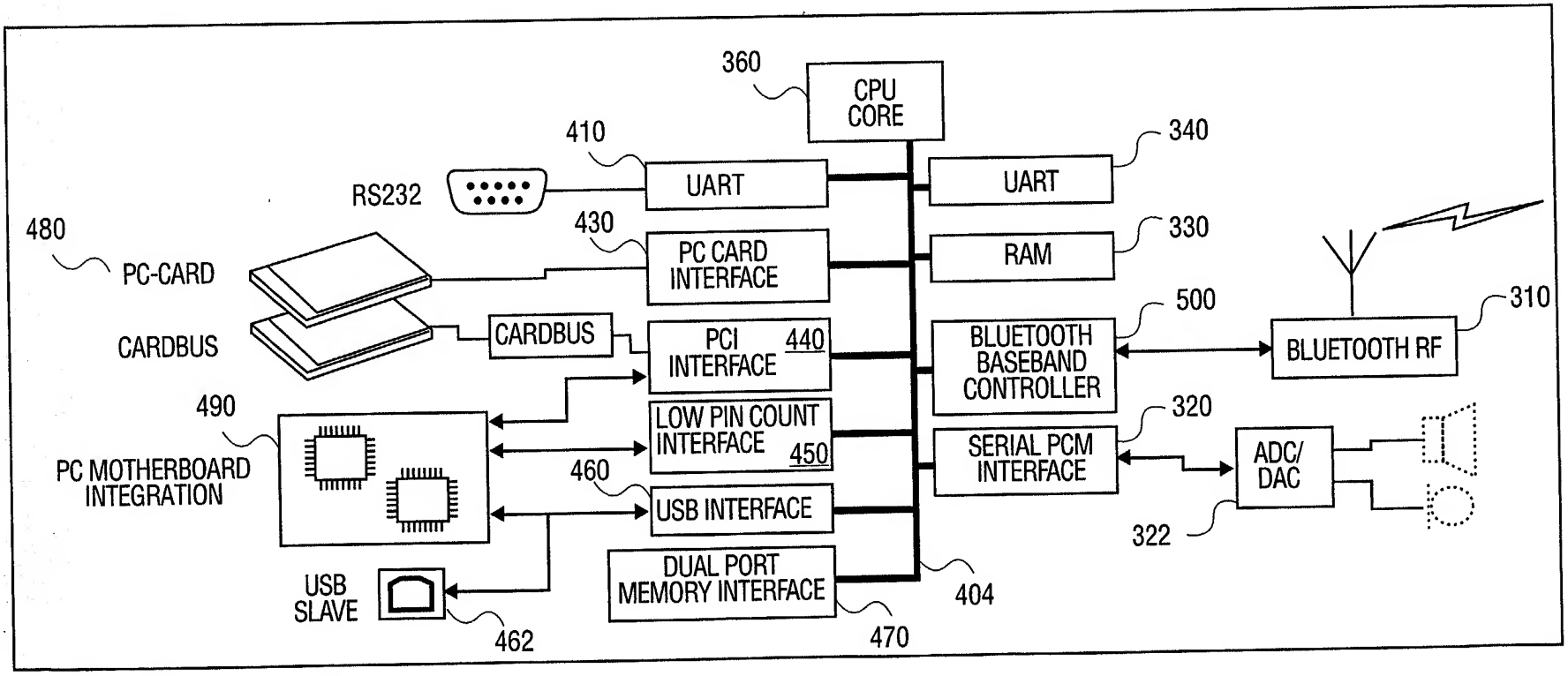



FIG. 3




HOST INTERFACE 400

FIG. 4

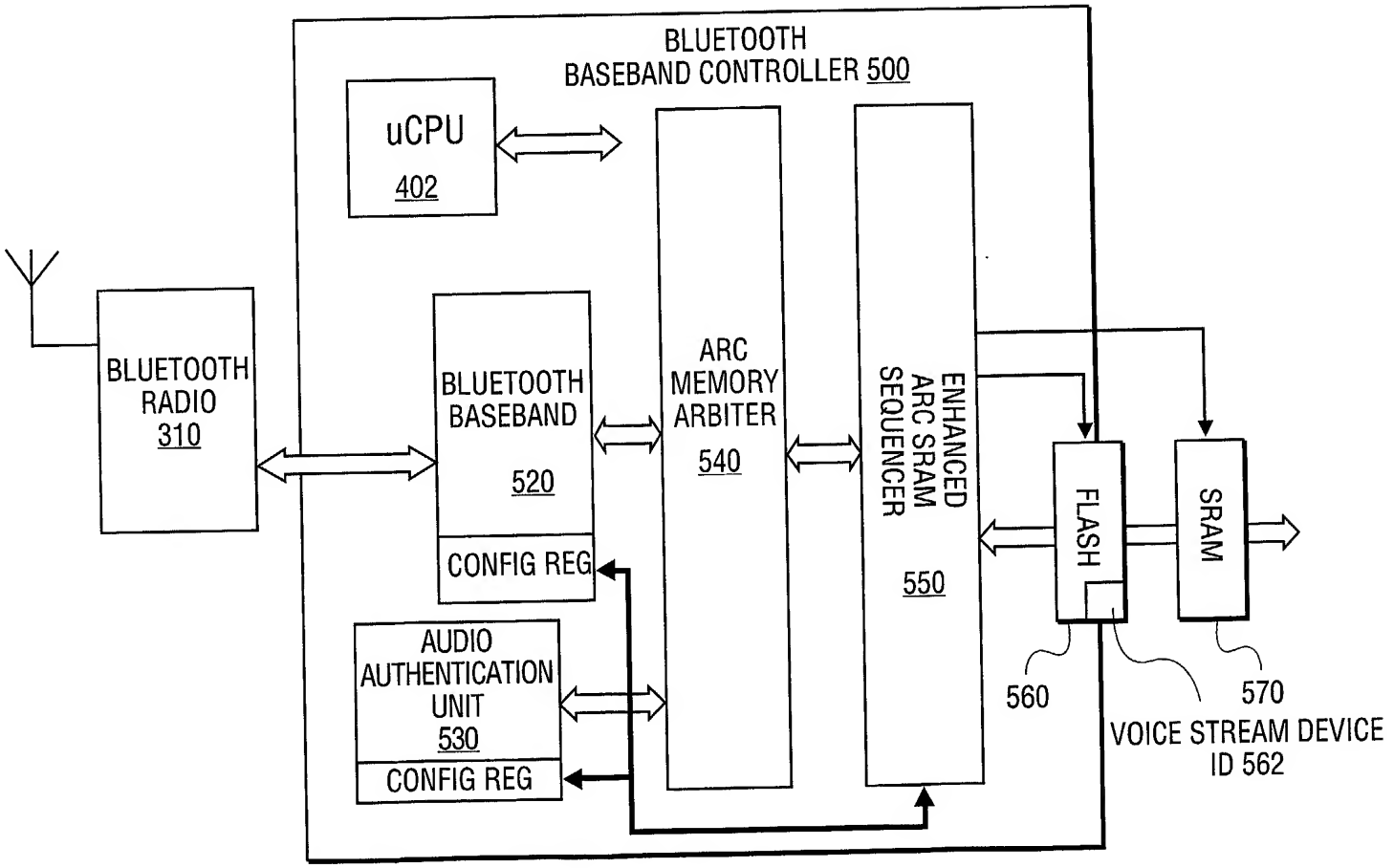
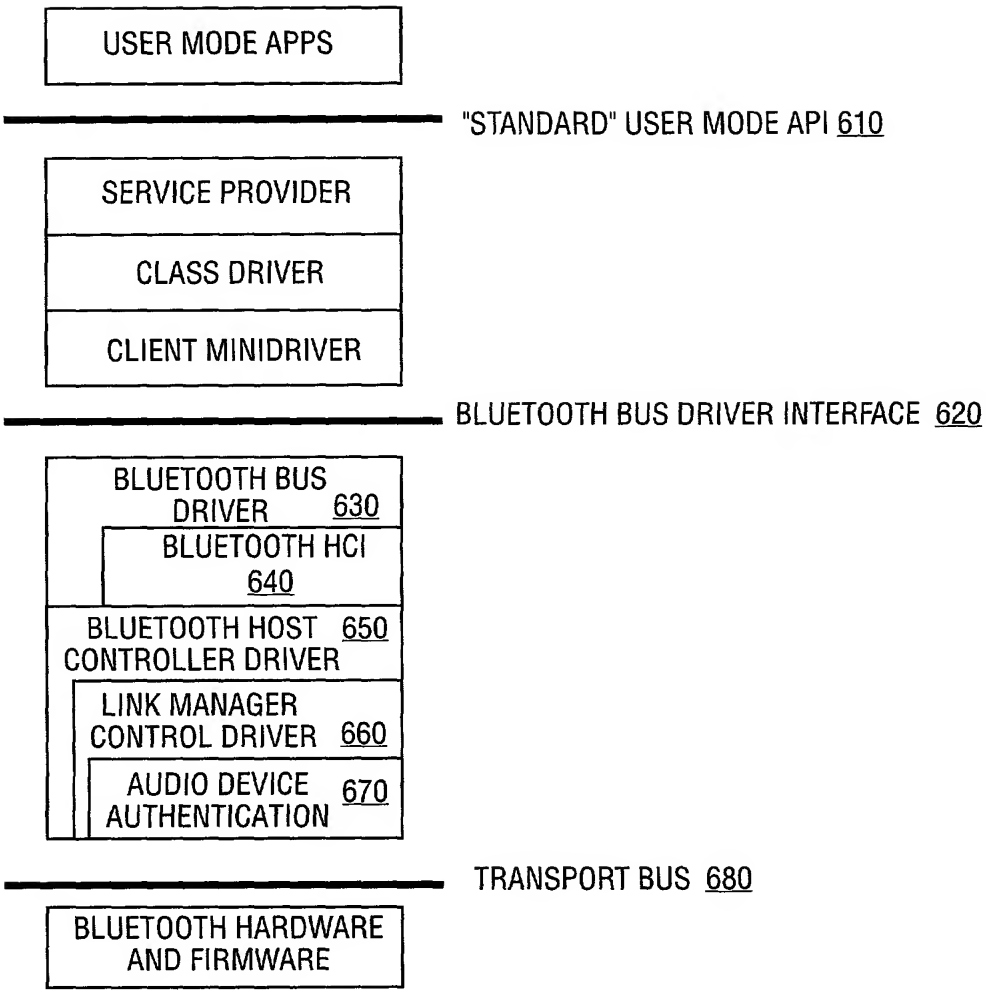

BLUETOOTH
BASEBAND CONTROLLER 500
uCPU
402
BLUETOOTH
RADIO
310
BLUETOOTH
BASEBAND
520
CONFIG REG
ARC
MEMORY
ARBITER
540
ENHANCED
ARC SRAM
SEQUENCER
550
FLASH
SRAM
AUDIO
AUTHENTICATION
UNIT
530
CONFIG REG
560
570
VOICE STREAM DEVICE
ID 562

FIG. 5




BLUETOOTH SOFTWARE STACK 600

**FIG. 6**

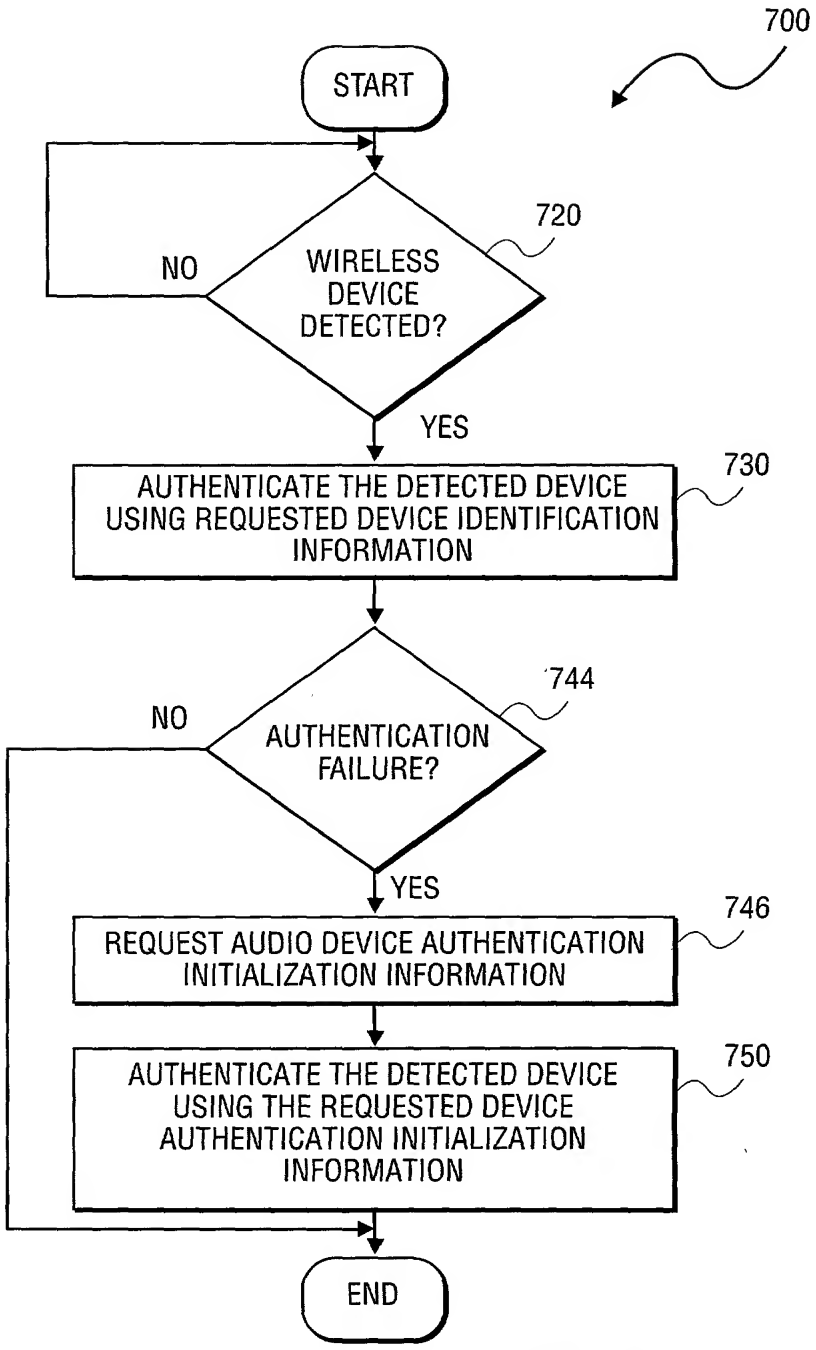

700
START
720
NO
WIRELESS DEVICE DETECTED?
YES
730
AUTHENTICATE THE DETECTED DEVICE USING REQUESTED DEVICE IDENTIFICATION INFORMATION
744
NO
AUTHENTICATION FAILURE?
YES
746
REQUEST AUDIO DEVICE AUTHENTICATION INITIALIZATION INFORMATION
750
AUTHENTICATE THE DETECTED DEVICE USING THE REQUESTED DEVICE AUTHENTICATION INITIALIZATION INFORMATION
END

FIG. 7

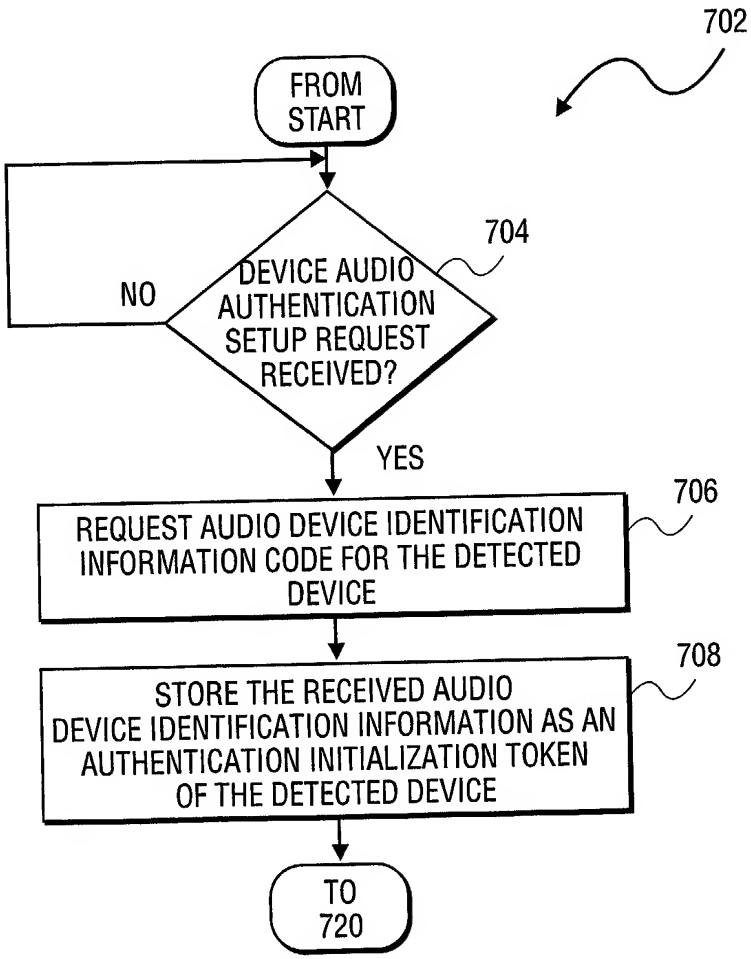

702
FROM START
704
DEVICE AUDIO AUTHENTICATION SETUP REQUEST RECEIVED?
NO
YES
706
REQUEST AUDIO DEVICE IDENTIFICATION INFORMATION CODE FOR THE DETECTED DEVICE
708
STORE THE RECEIVED AUDIO DEVICE IDENTIFICATION INFORMATION AS AN AUTHENTICATION INITIALIZATION TOKEN OF THE DETECTED DEVICE
TO 720

FIG. 8

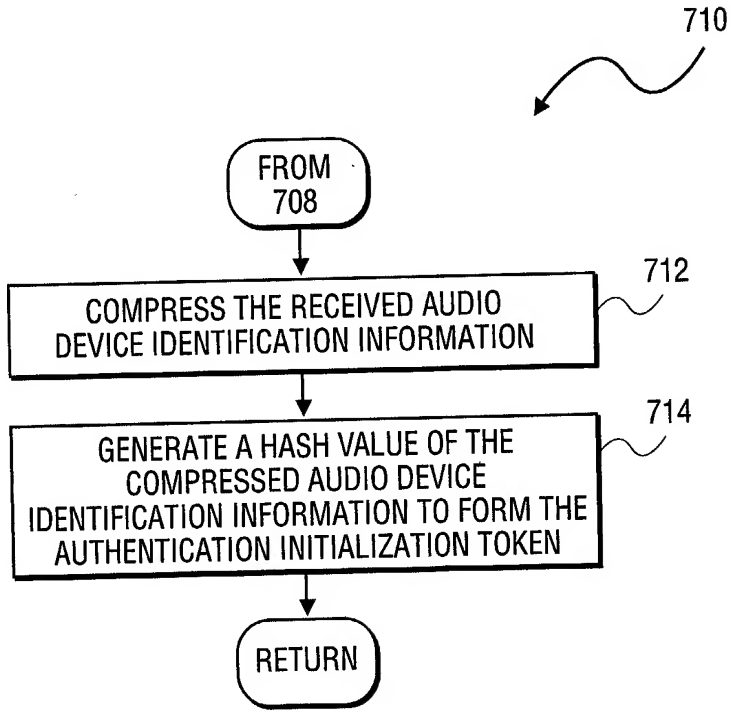

710
FROM 708
712
COMPRESS THE RECEIVED AUDIO DEVICE IDENTIFICATION INFORMATION
714
GENERATE A HASH VALUE OF THE COMPRESSED AUDIO DEVICE IDENTIFICATION INFORMATION TO FORM THE AUTHENTICATION INITIALIZATION TOKEN
RETURN

FIG. 9

Document ID: 0000000

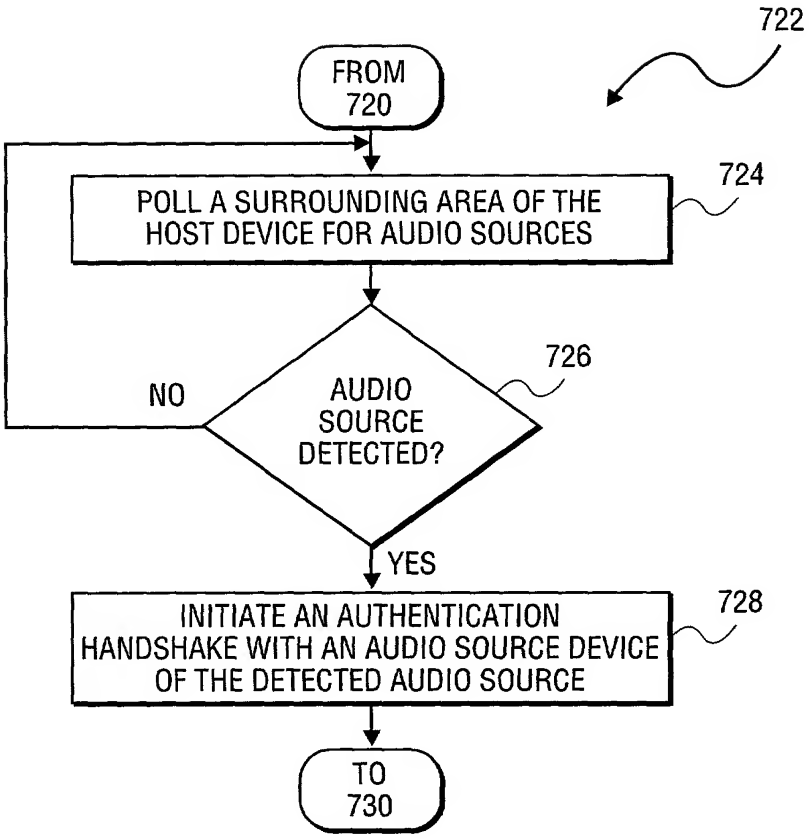



FIG. 10

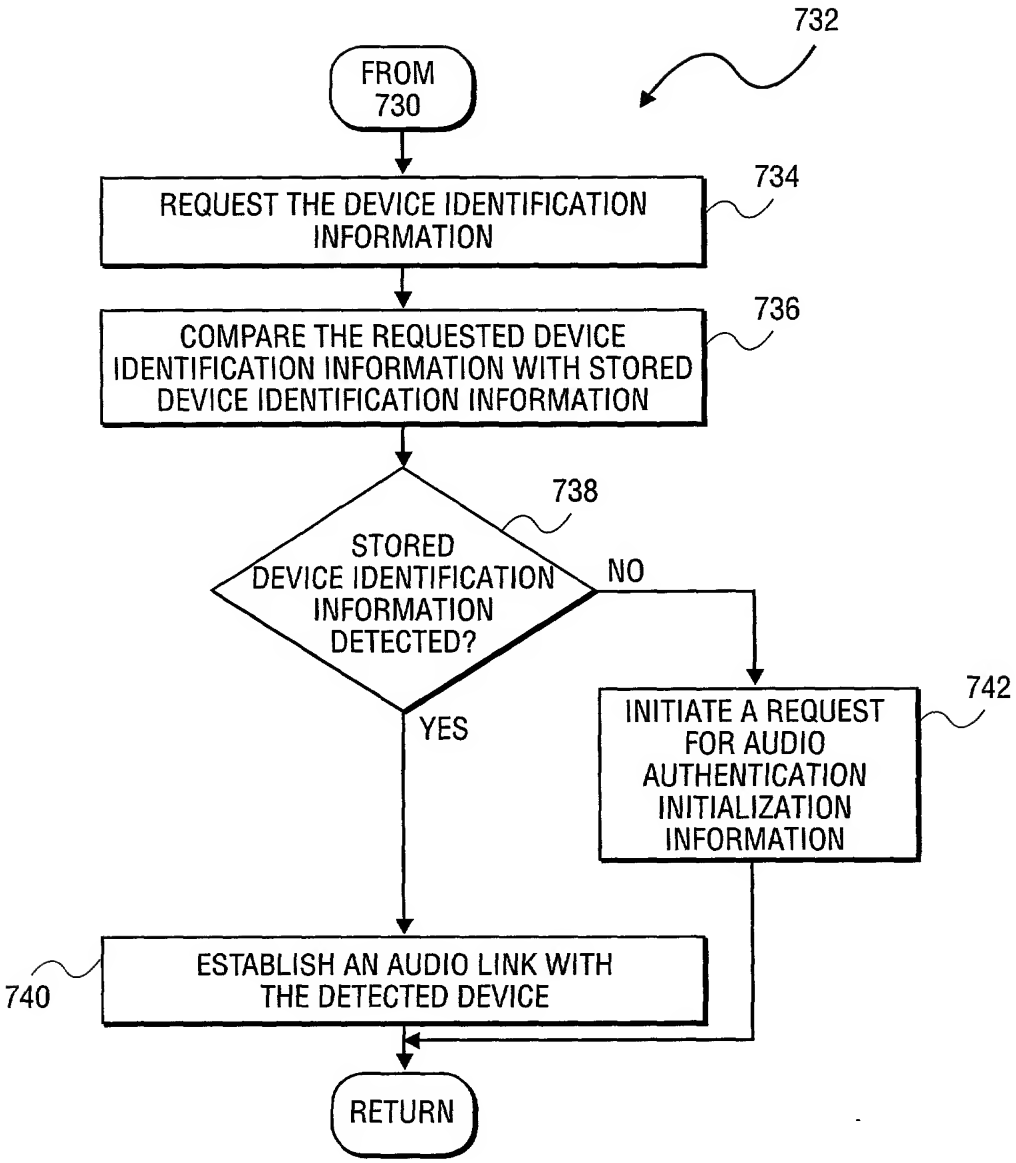

732
FROM 730
REQUEST THE DEVICE IDENTIFICATION INFORMATION
734
COMPARE THE REQUESTED DEVICE IDENTIFICATION INFORMATION WITH STORED DEVICE IDENTIFICATION INFORMATION
736
738
STORED DEVICE IDENTIFICATION INFORMATION DETECTED?
NO
YES
INITIATE A REQUEST FOR AUDIO AUTHENTICATION INITIALIZATION INFORMATION
742
ESTABLISH AN AUDIO LINK WITH THE DETECTED DEVICE
740
RETURN

FIG. 11

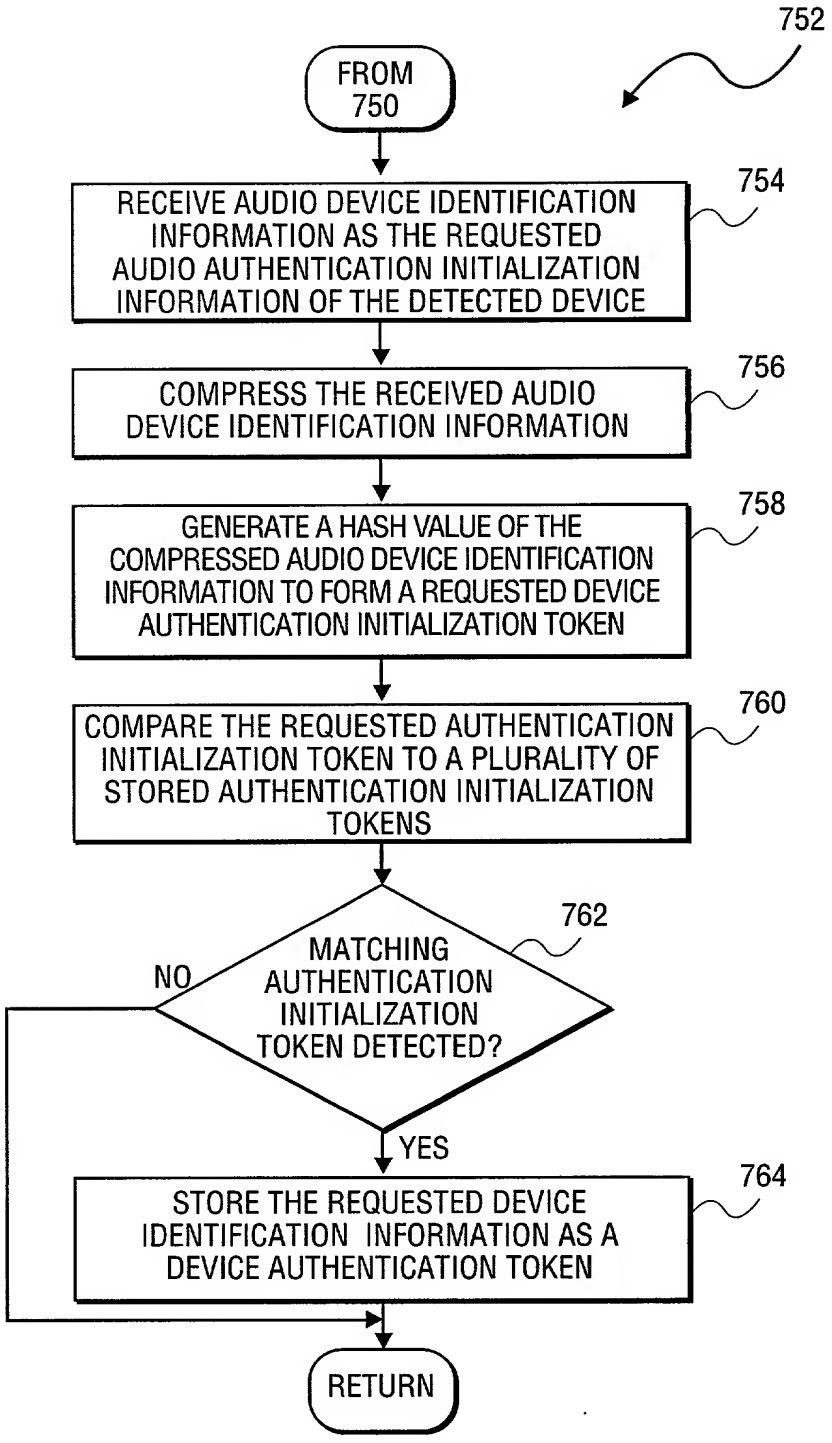

752
FROM 750
RECEIVE AUDIO DEVICE IDENTIFICATION INFORMATION AS THE REQUESTED AUDIO AUTHENTICATION INITIALIZATION INFORMATION OF THE DETECTED DEVICE
754
COMPRESS THE RECEIVED AUDIO DEVICE IDENTIFICATION INFORMATION
756
GENERATE A HASH VALUE OF THE COMPRESSED AUDIO DEVICE IDENTIFICATION INFORMATION TO FORM A REQUESTED DEVICE AUTHENTICATION INITIALIZATION TOKEN
758
COMPARE THE REQUESTED AUTHENTICATION INITIALIZATION TOKEN TO A PLURALITY OF STORED AUTHENTICATION INITIALIZATION TOKENS
760
MATCHING AUTHENTICATION INITIALIZATION TOKEN DETECTED?
762
NO
YES
STORE THE REQUESTED DEVICE IDENTIFICATION INFORMATION AS A DEVICE AUTHENTICATION TOKEN
764
RETURN

FIG. 12

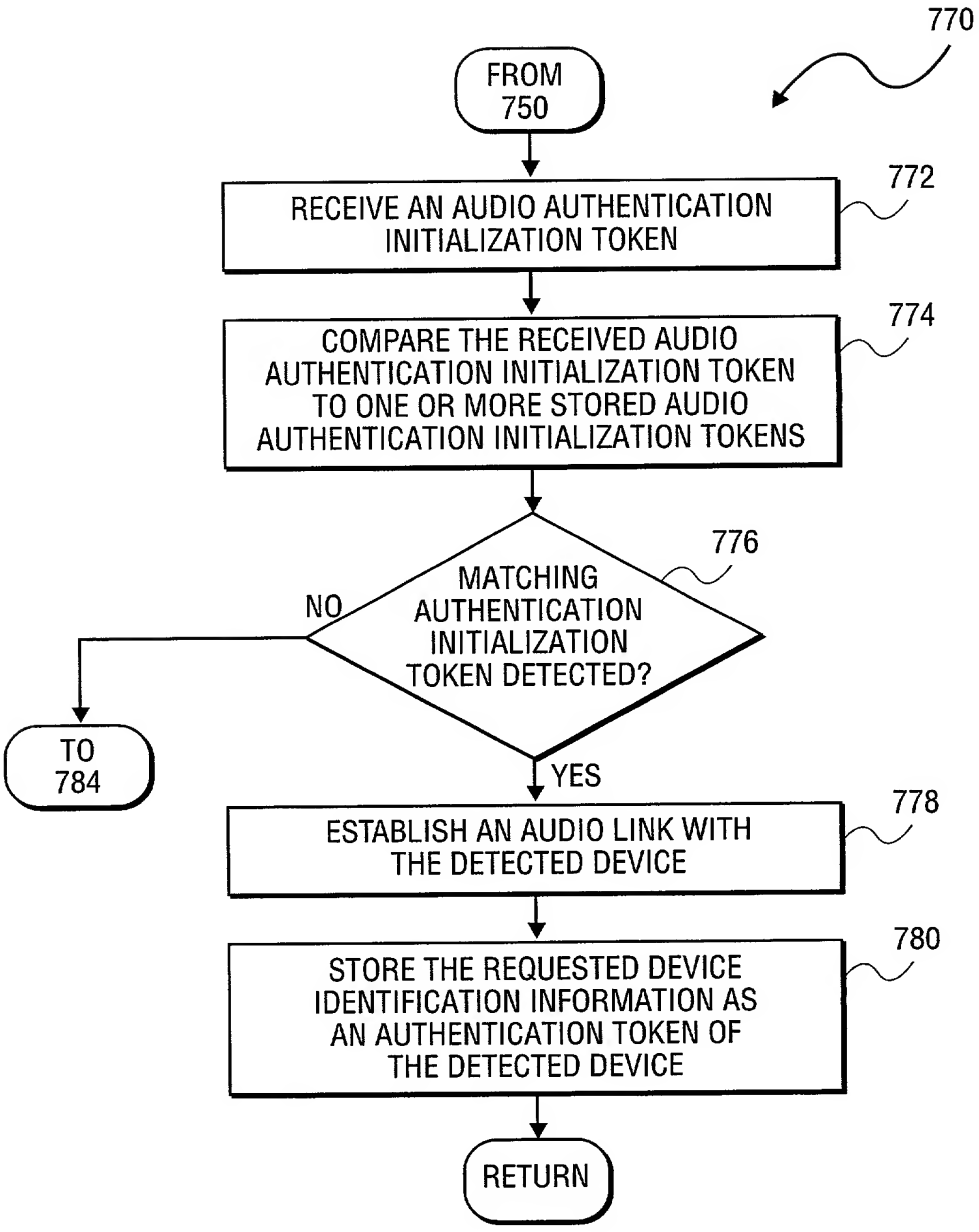

770
FROM 750
RECEIVE AN AUDIO AUTHENTICATION INITIALIZATION TOKEN
772
COMPARE THE RECEIVED AUDIO AUTHENTICATION INITIALIZATION TOKEN TO ONE OR MORE STORED AUDIO AUTHENTICATION INITIALIZATION TOKENS
774
MATCHING AUTHENTICATION INITIALIZATION TOKEN DETECTED?
776
NO
TO 784
YES
ESTABLISH AN AUDIO LINK WITH THE DETECTED DEVICE
778
STORE THE REQUESTED DEVICE IDENTIFICATION INFORMATION AS AN AUTHENTICATION TOKEN OF THE DETECTED DEVICE
780
RETURN

FIG. 13

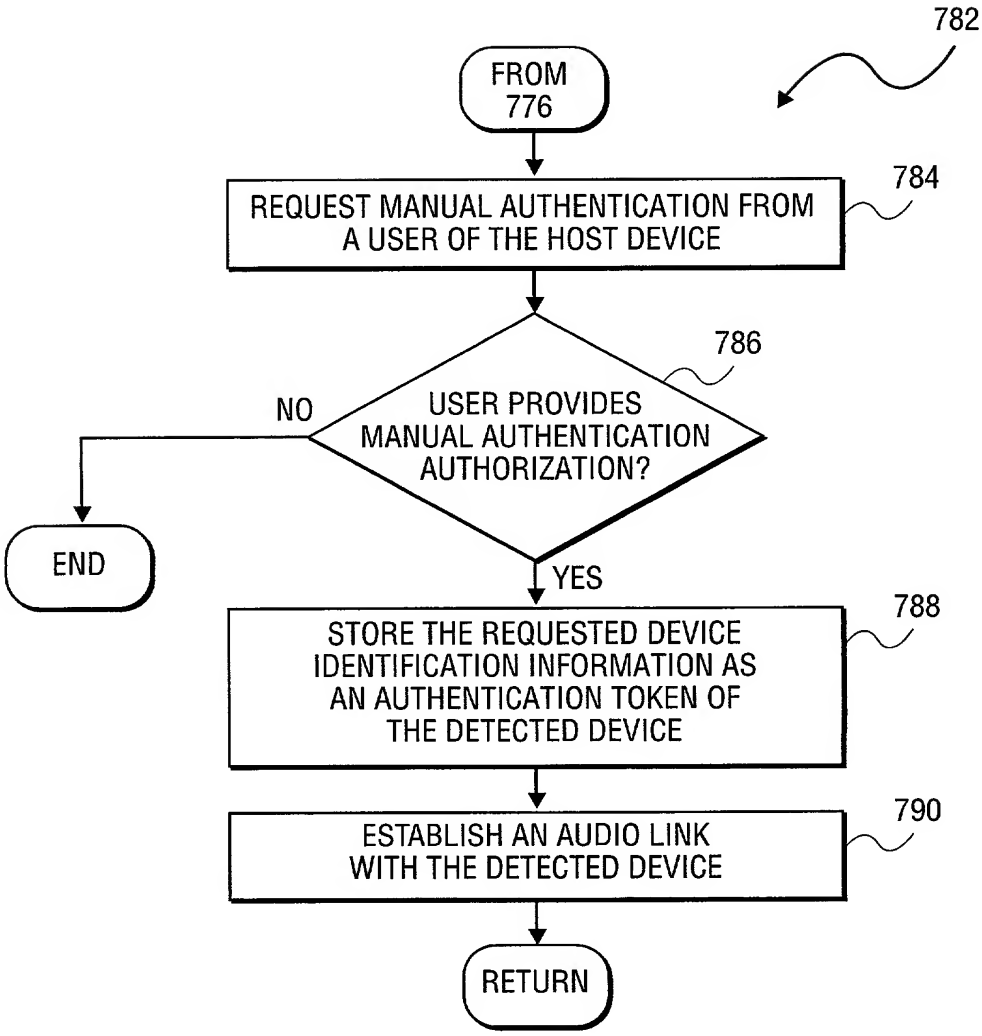

782
FROM 776
REQUEST MANUAL AUTHENTICATION FROM A USER OF THE HOST DEVICE
784
786
USER PROVIDES MANUAL AUTHENTICATION AUTHORIZATION?
NO
END
YES
STORE THE REQUESTED DEVICE IDENTIFICATION INFORMATION AS AN AUTHENTICATION TOKEN OF THE DETECTED DEVICE
788
ESTABLISH AN AUDIO LINK WITH THE DETECTED DEVICE
790
RETURN

FIG. 14

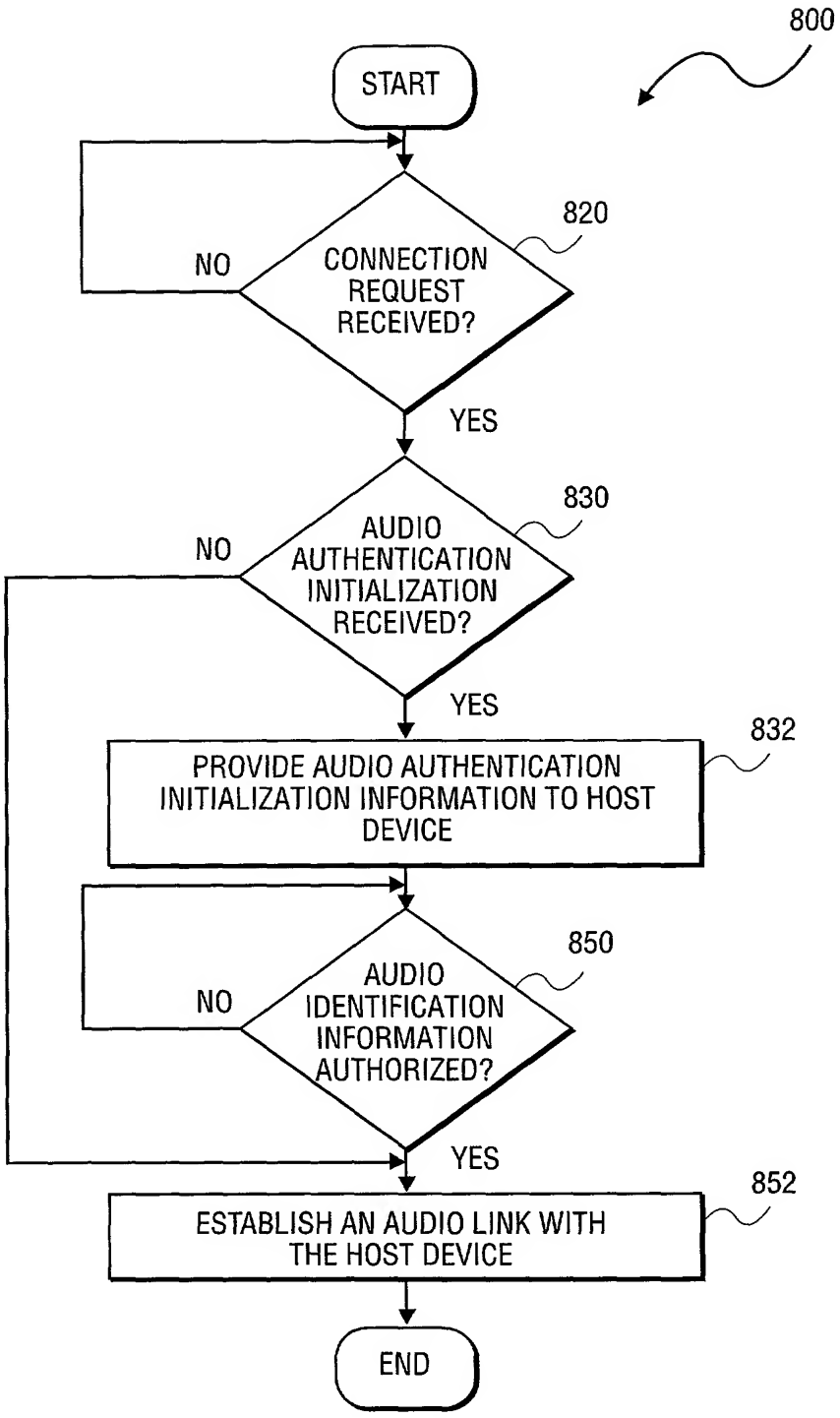

800
START
820
CONNECTION REQUEST RECEIVED?
NO
YES
830
AUDIO AUTHENTICATION INITIALIZATION RECEIVED?
NO
YES
832
PROVIDE AUDIO AUTHENTICATION INITIALIZATION INFORMATION TO HOST DEVICE
850
AUDIO IDENTIFICATION INFORMATION AUTHORIZED?
NO
YES
852
ESTABLISH AN AUDIO LINK WITH THE HOST DEVICE
END

FIG. 15

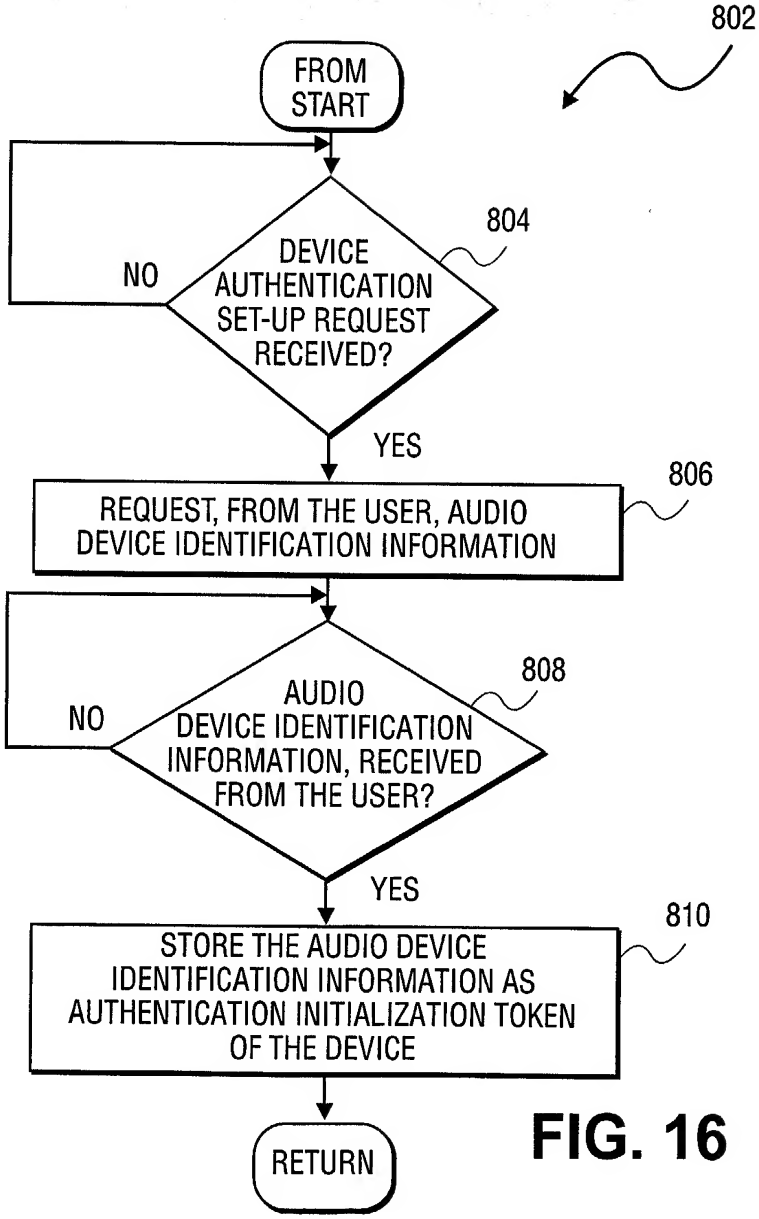

802
FROM START
804
DEVICE AUTHENTICATION SET-UP REQUEST RECEIVED?
NO
YES
806
REQUEST, FROM THE USER, AUDIO DEVICE IDENTIFICATION INFORMATION
808
AUDIO DEVICE IDENTIFICATION INFORMATION, RECEIVED FROM THE USER?
NO
YES
810
STORE THE AUDIO DEVICE IDENTIFICATION INFORMATION AS AUTHENTICATION INITIALIZATION TOKEN OF THE DEVICE
RETURN

FIG. 16

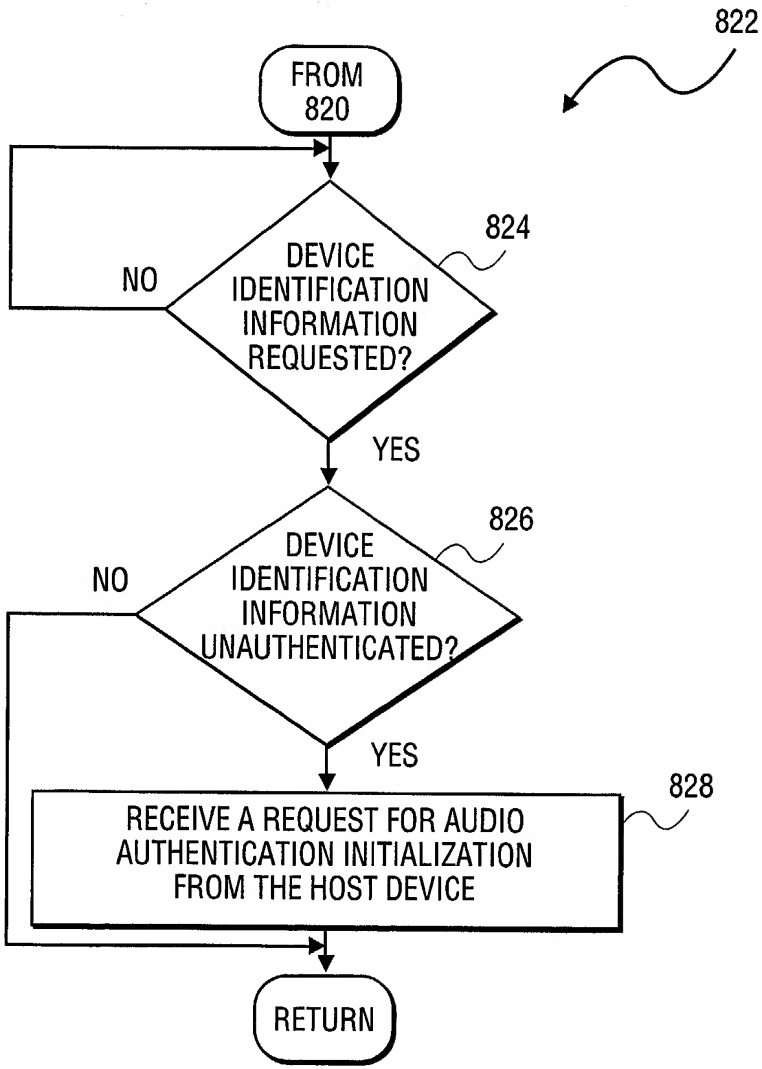

822
FROM 820
824
DEVICE IDENTIFICATION INFORMATION REQUESTED?
NO
YES
826
DEVICE IDENTIFICATION INFORMATION UNAUTHENTICATED?
NO
YES
828
RECEIVE A REQUEST FOR AUDIO AUTHENTICATION INITIALIZATION FROM THE HOST DEVICE
RETURN

FIG. 17

20080807 TOH2580T

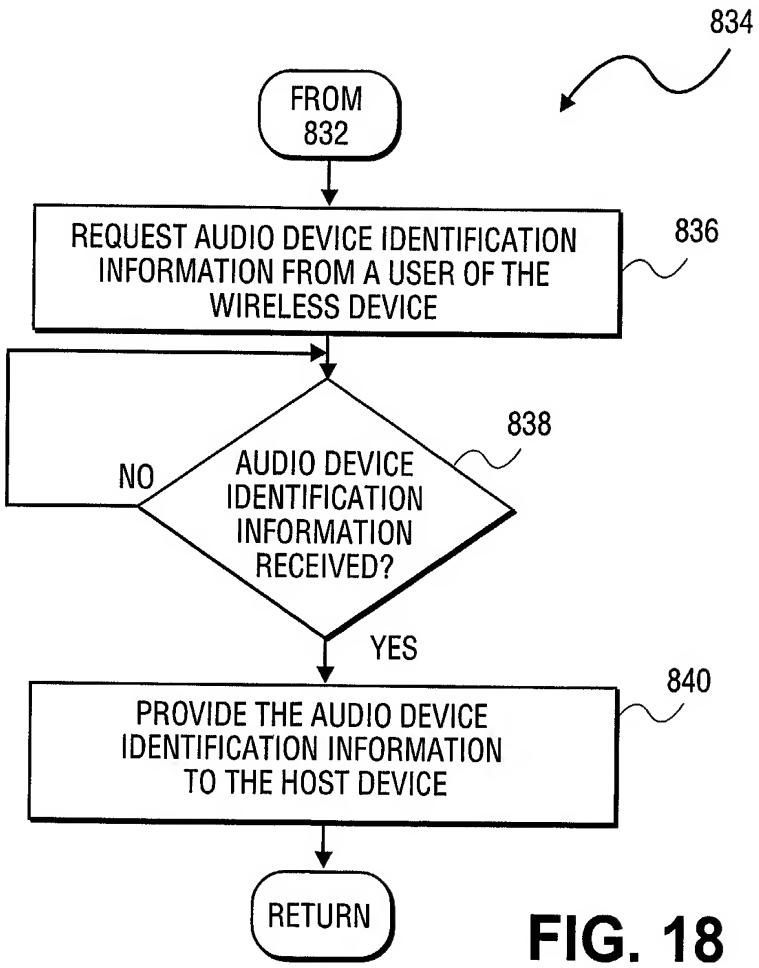



FIG. 18

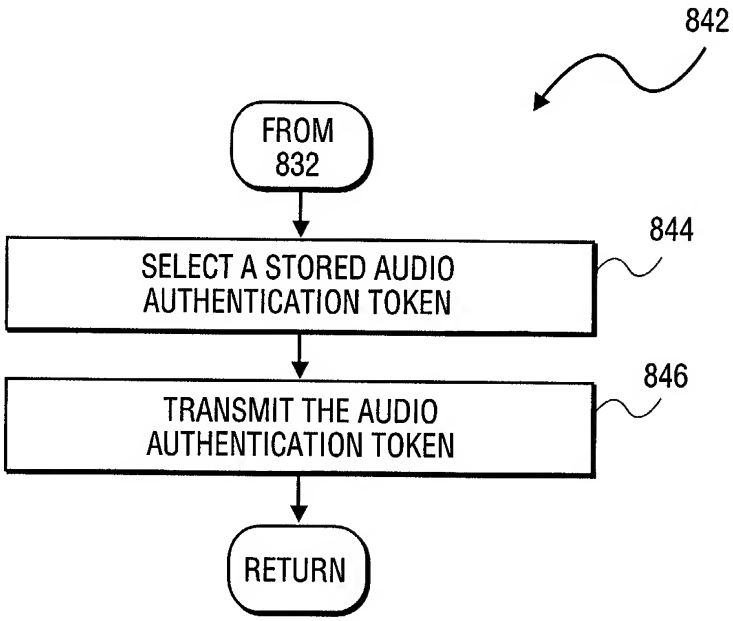



FIG. 19